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Two-Valued Probability Measure on the Pontryagin Space

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Abstract

© 2015, Springer Science+Business Media New York. The well known Kochen-Specker's theorem is devoted to the problem of hidden variables in quantum mechanics. The Kochen-Specker theorem says: There is no two-valued probability measure on the real Hilbert space of dimension three. In the paper we present an analogy of Kochen-Specker's theorem in Pontryagin space: A Pontryagin spase H of dimension greater than or equal to three has a two-valued probability measure if and only if H has indefinite rank one: in which case, any such two-valued probability measure on H is unique.

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Keywords

Idempotent, Indefinite metric space, Pontryagin space, Probability measure, Projection, Quantum logic